



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,382	12/21/2001	Christophe Boyer	PET-1979	5830

23599 7590 10/20/2004

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER

KERNS, KEVIN P

ART UNIT PAPER NUMBER

1725

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,382

Applicant(s)

BOYER ET AL.

Examiner

Kevin P. Kerns

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address.

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-23 is/are pending in the application.
- 4a) Of the above claim(s) 4,13,15-20 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,8-12,14,21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-5 and 8-23 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/26/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants' election with traverse of Group Ib (claims 1, 3, 5, 8-12, and 22) in the reply filed on September 2, 2004 is acknowledged. The traversal is on the ground(s) that the USPTO has not established that it would pose an undue burden to search the full scope of the claims. This is not found persuasive because the method of Group II can be practiced on an apparatus that includes a chamber with bottom orifices and wherein the tubes or conduits are positioned adjacent the chamber rather than traversing the chamber, as set forth in the Office Action mailed August 18, 2004. However, the applicants do not distinctly argue that the restriction between apparatus and method is improper, as they cite 37 CFR 1.141 and MPEP 821.04, which are instead related to the species restriction requirement. With regard to the species portion of the restriction requirement, the applicants' arguments have been fully considered and are persuasive, as claim 1 is generic to Group I. As a result, Groups Ia and Ib will be considered and examined together, such that the entire Group I (claims 1-3, 5, 8-12, 14, 21, and 22) are presently under consideration.

The restriction requirement between apparatus (Group I) and method (Group II) is still deemed proper and is therefore made FINAL.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the

Art Unit: 1725

description: "3" (Figures 1 and 3). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Note: In this instance, the abstract recites the legal term "comprises" in the 5th line.

Art Unit: 1725

4. The abstract of the disclosure is objected to because "is described" should be deleted in the 1st line. In the last line, "Figure 1 to be published." should also be deleted.

Correction is required. See MPEP § 608.01(b).

5. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

In this instance, there are no section headings in the specification.

6. The disclosure is objected to because of the following informalities: on page 2, lines 8-10, it is unclear what is meant by the term "cuts". Throughout the specification, there are numerous occasions where the "s" should be changed to "z" in terms spelled in a European format. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-3, 5, 8-12, 14, 21, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, it is unclear what is meant by the limitation "at least one point level with said device", as the device covers a wide area/volume, but a specified "height" that is "level" is not distinctly claimed.

Claims 5, 21, and 22 recite the limitation "the head". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1725

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 5, 8, 11, 12, and 14 insofar as definite (with respect to the indefinite "at least one point level with said device" in the 35 USC 112, 2nd paragraph rejections above) are rejected under 35 U.S.C. 102(b) as being anticipated by Den Hartog et al. (EP 0 602 287 A1).

Den Hartog et al. disclose an apparatus that includes a reactor for catalytic processes and a separation plate for use as a portion of a distillation column, in which the apparatus includes a vessel 1 housing an injection device (redistribution device 8) for homogeneous distribution of at least one fluid downstream of the device into fluid exchange boxes 9, such that the lower end of the redistribution device 8 includes a fluid distributor 28 having a distribution tray 30 provided with distribution plates 32 that define openings 33 for passage of liquid and gas (fluids) at a defined distance below a central chamber 25; a central chamber 25 that includes both orifices (openings 19,70) and tubes/conduits (openings 71) with a free end that serves as another fluid passage; a separation plate 49 for separating liquid and gas, serving as a portion of a distillation column section; and two granular solid catalyst beds (6,7) surrounding respective ends of the redistribution device 8, serving as a portion of a reactor (abstract; column 1, lines 1-11 and 25-58; column 2, lines 19-57; column 3, line 1 through column 7, line 18; and Figures 1-5).

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to

Art Unit: 1725

patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Further, the examiner notes that intended use limitations, such as "for carrying out separate injection of two fluids in two different physical states", do not have patentable weight in an apparatus claim. Furthermore, the fluids and the flow direction(s) of the fluids do not provide further structural limitation(s) to these apparatus claims. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating to the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim." See MPEP 2114 and 2115.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1725

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 9, 10, 21, and 22 insofar as definite (with respect to the indefinite "at least one point level with said device" in the 35 USC 112, 2nd paragraph rejections above) are rejected under 35 U.S.C. 103(a) as being unpatentable over Den Hartog et al. (EP 0 602 287 A1).

Den Hartog et al. disclose the elements of claims 1, 3, and 8 above. Den Hartog et al. do not specifically disclose the range of distances below the chamber and between the end of the tubes and the top of the bed. However, one of ordinary skill in the art would have recognized that the distances required by a given reactor or distillation column would readily be determined and dependent of the area/volume of the vessel and sub-chambers within the vessel, for the purpose of achieving optimum efficiency/conversion in the catalytic/distillation apparatus. As a result, it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to determine the optimum range of distances given within the chamber to achieve optimum operational efficiency.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Wijffels et al., Gupta et al., and Kubersky et al. references are also cited in PTO-892.

Art Unit: 1725

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 10/14/04*
Examiner
Art Unit 1725

KPK
kpk
October 14, 2004